

EXHIBIT 4

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11 DEPOSITION OF JONATHAN GURYAN
12
13 DATE: April 27, 2022
14 TIME: 9:30 a.m.
15 LOCATION: Via Zoom Videoconference
16
17 REPORTED BY: Constance H. Rhodes
18 Reporter, Notary
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20
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22 Job No. CS5185100

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1 case in which in your opinions have been, I would 2 say, excluded or stricken or limited by the court? 3 A Yes. 4 Q Have you ever been an expert in a case 5 involving the Small Business Administration's 8(a) 6 business development? 7 A I believe so. 8 Q Are you familiar with the Small Business 9 Administration's 8(a) business development 10 program? 11 A I have made myself familiar with it over 12 the course of working on this case. 13 Q What did you do to become familiar with 14 it while working on the case? 15 A Well, I had conversations with counsel, 16 and then I also reviewed information on the web on 17 the -- about the -- that described the rules of 18 the program. And then I read the filings in this 19 case. 20 Q Which filings in the case have you read? 21 A I read a copy of the complaint and then 22 I've also -- maybe this is not a filing, but I've	1 the contracting right, but they contract with the 2 Small Business Administration and designate some 3 contracts to be 8(a) contracts that would give 4 preferences to small businesses that are deemed to 5 be 8(a) eligible to win those contracts. 6 My understanding is that there are certain 7 groups of businesses that become eligible, are 8 presumed eligible, and then other -- but there are 9 other ways to become eligible to participate in the 10 8(a) program. 11 Q Do you have any opinions about the 8(a) 12 program? 13 MR. ROSMAN: Objection to the form of the 14 question. You may answer. 15 THE WITNESS: Are you asking if I am 16 offering an opinion as an expert in this case about 17 the 8(a) program? 18 BY MS. DINAN: 19 Q Sure. Let's go with that. 20 A I'm -- I don't -- I'm not offering any 21 opinions on any legal matters because I'm not a 22 legal expert, and I'm -- I'm not -- I don't plan
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1 read descriptions of it in other expert reports. 2 Q The other experts in this case? 3 A Yes. 4 Q You said you read materials on the web. 5 Do you recall what those websites were? 6 A I don't think I could tell you the -- 7 like the web address, but they were -- I believe 8 they were websites, government websites, from the 9 Small Business Administration that describe the 10 8(a) program and the process of different ways to 11 become, you know, registered for the 8(a) program 12 and the rules. 13 Q So what is your understanding of the 14 8(a) program? 15 A My understanding of the 8(a) program is 16 that it's a program that is intended to increase 17 the share of government contracting dollars that 18 go to small businesses, in particular small 19 businesses that are economically disadvantaged -- 20 economically and socially disadvantaged, I 21 believe; that the different government agencies 22 can -- I'm not sure I'll get the exact details of	1 to offer any opinion about the 8(a) program other 2 than to the extent that it informs the opinions 3 that I've laid out in my report. 4 Q I understand you are not offering an 5 expert about the 8(a) program. Do you have any 6 personal opinions about the 8(a) program? 7 A None that I intend to offer in this 8 case. 9 Q Okay. When were you first contacted by 10 the plaintiff about getting involved in this case? 11 A I believe it was either January or 12 February of this year. 13 Q Of 2022? 14 A Yes. 15 Q And what were you asked to do? 16 A I was told there would be expert reports 17 filed by defense, and I was asked to review those 18 expert reports and to provide my opinion of the 19 methods used in those reports and of the 20 conclusions that those -- and opinions that those 21 experts offered. 22 Q Were you contacted before or after

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<p>1 Q You indicate that the existence of 2 disparities in a particular market -- here I'm 3 reading from page 8 again -- could have been 4 caused by nondiscriminatory factors, by 5 discrimination that exists outside of that market 6 and discrimination that exists in markets that 7 affect participants prior to the market in 8 question, by discrimination by participants in the 9 market in question or other factors.</p> <p>10 What do you mean in that paragraph, "by 11 discrimination that exists outside the market"?</p> <p>12 A Just to clarify, just to make sure the 13 record is clear, I think you skipped a few words 14 in reading that, so I just want to make sure that 15 if we're quoting from that sentence we use the 16 actual sentence in the report.</p> <p>17 But you are asking about the phrase "by 18 discrimination that exists outside of that market?"</p> <p>19 Q Yes.</p> <p>20 A What I mean is that if the purpose or if 21 the intention of a test, a statistical test, is to 22 measure discrimination in a particular market,</p>	<p>1 Q Is it your understanding that the only 2 relevant question in this case is whether 3 disparities in a particular market, specifically 4 the market that the plaintiff ultimately operates 5 in, have been caused by discrimination in that 6 market?</p> <p>7 A I'm not offering an opinion one way or 8 the other about whether that is the relevant question. 9 What I'm offering is, based on my expertise as an 10 economist who studies discrimination, that the 11 analyses that Dr. Wainwright and Mr. Chow did, 12 they do not answer the question of whether 13 discrimination in a particular market caused a 14 disparity that they measure. Whether that is the 15 relevant legal question is not something that I'm 16 opining.</p> <p>17 Q But you don't have an opinion as to what 18 the relevant market is, correct?</p> <p>19 A Again, when you say "relevant" if what 20 you mean by relevant is relevant in a legal sense, 21 I'm not offering an opinion about a legal question 22 like that.</p>
<p>1 then you have to assess whether -- and you find a 2 disparity in that market, then you have to assess 3 whether that disparity was caused by factors other 4 than discrimination in that market.</p> <p>5 Some of those factors could be 6 nondiscriminatory factors, and some of those factors 7 may be discrimination, but discrimination that 8 exists in some other market that has effects on this 9 market.</p> <p>10 Q Do you have an opinion as to what the 11 relevant market is in this case?</p> <p>12 A So that is a legal question that I do 13 not have an opinion on. I -- so no, though I am 14 offering opinions that will -- you know, are 15 described later in the report about the fact that 16 some of the analyses that Dr. Wainwright and 17 Mr. Chow do include information from industries 18 that are different than the industry that the 19 plaintiff operates in.</p> <p>20 But to be clear, I am not offering an 21 opinion about -- in a legal sense -- what is the 22 relevant market for the purposes of this case.</p>	<p>1 Q I'm not asking in a legal sense. I'm 2 asking in the sense that you just described it. 3 As you just said, I think, the question in this 4 case is whether there is discrimination in a 5 particular market. You think their analyses 6 haven't answered that question.</p> <p>7 So as you've explained it, what do you 8 consider to be the relevant market here?</p> <p>9 MR. ROSMAN: Objection to the form of the 10 question. You may answer if you understand it.</p> <p>11 THE WITNESS: Again, I said a particular 12 market. And what particular market or markets are 13 the markets that are relevant to the legal questions 14 in this case is not something that I am offering an 15 opinion on.</p> <p>16 But what I am offering an opinion on is 17 if there is a particular market or set of markets, 18 that it is important, for the purpose of this 19 case, for somebody to test for the presence of 20 discrimination. I'm offering an opinion that in 21 order to assess whether there is discrimination in 22 any set of markets, you have to assess whether any</p>

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<p>1 in the rest of this study, which include audit 2 studies, correspondence studies, natural 3 experiments, field experiments. Those are methods 4 that, you know, people have developed in different 5 contexts to try to measure whether treatment is 6 different of, for instance, workers who are equally 7 productive or would be equally productive but happen 8 to be of a different race or a different gender.</p> <p>9 Q Do you believe that discrimination 10 requires proof of an individual's conscious 11 intent?</p> <p>12 MR. ROSMAN: Objection to the form of the 13 question. You may answer.</p> <p>14 THE WITNESS: So let me preface this by 15 saying I'm not a legal expert. I'm not offering 16 legal opinions. My understanding is that that 17 question depends on the type of discrimination 18 that's being claimed. So there certainly are 19 situations in my nonexpert -- nonlegal expert 20 understanding where it is possible to violate the 21 law related to discrimination without someone having 22 to show intent.</p>	<p>1 decision of pay on group membership, you could end 2 up with differences in pay that would show up in 3 regression. That's different from saying that it 4 is necessary to draw an inference of an employer's 5 intent to come to a conclusion about 6 discrimination.</p> <p>7 Q Okay. Same footnote, it says: It could 8 be the case that race or gender is correlated with 9 other proxies for productivity that are 10 unobservable to the researcher.</p> <p>11 Are you aware of any studies that show a 12 correlation between race and productivity?</p> <p>13 A So for instance, average years of 14 education are higher for -- for white people than 15 black people on average. And years of education 16 is correlated with productivity on average.</p> <p>17 That's not going to be true in every job. There 18 are some jobs where education probably isn't 19 correlated with productivity. There are others 20 where it is. That's an example of something that 21 might vary on average by race that is correlated 22 with productivity. Again, on average.</p>
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<p>1 BY MS. DINAN:</p> <p>2 Q I understand this is just an example, 3 but this example discusses hiring decisions. Do 4 you believe it has any relevance to contracting?</p> <p>5 A Again, I'm going to be careful when you 6 use the word relevant because relevant sounds like 7 something you are asking me for an opinion about 8 what's relevant in the legal sense.</p> <p>9 Q I am not. I assure you.</p> <p>10 A So then I'm not sure what you mean.</p> <p>11 Q I guess my question is, here the example 12 is talking about how you would determine what's in 13 the mind of an employer when making a hiring 14 decision. How, for example, would you determine 15 what's in the mind of a contractor when making 16 decisions about whether or not to accept a bid?</p> <p>17 A No. That's -- again, I disagree with 18 the premise of the question. Bertrand and Duflo 19 are not saying that it is necessary to figure out 20 what's in the mind of an employer to perform a 21 proper test for discrimination. What they're 22 saying is that even if employers never based their</p>	<p>1 It's also the case that the way, you know, 2 public schools are funded in the United States and 3 the fact that there is racial segregation in where 4 people live contributes to the differences in the 5 funding of schools that, on average, African 6 American and white kids go to. And so differences 7 in access to well funded education might generate 8 differences in average productivity by the time 9 people get to the labor market. An employer may not 10 have very good information, and certainly a 11 researcher may not have very good information on the 12 level of funding in schools that people attended 13 when they were kids.</p> <p>14 Q You listed two factors: Average years 15 of education and school funding or access to 16 education, which are not themselves -- which are 17 separate factors that you can control for other 18 than race itself, correct?</p> <p>19 A It depends on what information you have 20 in a dataset. So you might have years of 21 education in a dataset. That would be relatively 22 common. It would be fairly uncommon in a dataset</p>

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1 to answer. I can't answer that in the abstract 2 without knowing what question I'm trying to answer 3 and what data I have and what the setting is that 4 I'm trying to answer the question in. 5 Q Let's assume we're looking for 6 disparities in contracting, the issue in this 7 case, and you are trying to determine which 8 variables to include. What types of information 9 would you look at in making that judgment? 10 MR. ROSMAN: Objection to the form of the 11 question. 12 THE WITNESS: Your question suggested that 13 the goal is to measure disparities. Are you really 14 asking whether we want to measure disparities, or 15 are we trying to measure discrimination? 16 BY MS. DINAN: 17 Q I'm trying to get at your thinking 18 process. You, as an economist, are -- are, you 19 know, trying to put together a study of regression 20 analysis and determine which variables to include 21 in that regression analysis. What would you do to 22 make those decisions?	1 to include? 2 MR. ROSMAN: I'm going to object to the 3 question again. Go ahead. 4 THE WITNESS: I disagree with the premise. 5 I'm not willing to agree that I would try to run a 6 regression to try to answer that question. 7 BY MS. DINAN: 8 Q Is it your opinion that if you are not 9 able to control for every possible variable that 10 might cause the average outcomes of two groups to 11 be different that you have failed to do a proper 12 regression analysis? 13 A Whether the regression analysis is 14 proper or not depends on what question you are 15 trying to answer. If you are trying to answer a 16 question of whether discrimination is present in a 17 particular market, then in order to do that using 18 a regression analysis, you need to be able to rule 19 out that any disparity that you measure may have 20 been caused by nondiscriminatory factors or by 21 factors in other markets that you are not trying 22 to test for discrimination in. If the regression
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1 A Well, the first thing I would do is I 2 would determine what question I'm trying to 3 answer, which you haven't specified. So what 4 variables I put into a regression would depend on 5 what question I was trying to answer. I also 6 don't agree with the premise that I would even be 7 running a regression to try to answer this 8 question. It would depend on what question I was 9 trying to answer. 10 One of my opinions is that there's some 11 questions where it's unlikely that we will be able 12 to answer them using a regression method that tries 13 to hold things constant as opposed to some other 14 method. 15 Q I understand that you think regression 16 is inappropriate for this. But let's take an 17 example. Again, this case. I will be more 18 precise. You're not looking at measuring 19 disparities, but you're looking to measure whether 20 there is discrimination in contracting outcomes. 21 And you are looking to run a regression to do 22 that. How would you think about which variables	1 analysis can't do that, then it can't answer the 2 question. 3 Q If a regression analysis can't do that, 4 as you said, do you think there's any value in a 5 regression analysis at all? 6 A Whether there is value is basically 7 asking whether it can answer some other question 8 and whether the answer to some other question is 9 valuable in the context of this case is not for me 10 to decide. 11 I don't have an opinion about what 12 questions should be answered by -- you know, that 13 would be relevant for legal proceedings. I'm just 14 saying that if the purpose of a statistical analysis 15 is to test for discrimination in a market, you must 16 be able to rule out nondiscriminatory factors or 17 discrimination in other markets that had the 18 potential to cause the disparity. And if you can't 19 do that, then you are not able to use that 20 regression analysis to answer the question of 21 whether there's discrimination in that market. 22 Q You've indicated in your own research,